MARSHALL STAR

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Microgravity Science Mission Cut Short, Results Still Achieved

The first Microgravity Science Laboratory (MSL-1) Space Shuttle flight — planned as a 16-day, multi-national mission to conduct a wide range of research in a specially outfitted Spacelab module — ended prematurely on Tuesday with Columbia's landing at Kennedy Space Center, just under four days after liftoff.

The decision to cut short the flight was made Sunday by NASA's Mission Management Team after flight controllers determined one of three electricity-generating fuel cells aboard the Shuttle was performing erratically, a condition where flight rules dictate landing early.

The announcement of a much-abbreviated mission came as a shock and surprise both to Columbia's seven-member crew and the MSL-1 team of controllers and scientists. The majority of the ground-based science and payload operations team were based at the Marshall Center's Spacelab Mission Operations Control in Building 4663. Although it was a major disappointment, the decision spurred members of the team, both in orbit and on the ground, to make an all-out effort to squeeze as much scientific research as possible from the shortened mission.

Following the Sunday announcement, the Huntsville-based Spacelab science control team, under the direction of MSL-1 Mission Manager Teresa Vanhooser and Mission Scientist Dr. Michael Robinson, focused on realigning the mission's overall schedule and reducing experiment run times, to maximize the scientific return.

Despite the condensed amount of time available, there were several bright spots and moments marked by excited reactions from science team members when they saw some of the types of results they had been working toward. For example:

Combustion scientist Dr. Gerard Faeth of the University of Michigan, Ann Arbor, commented on Sunday that a "first" had been accomplished by his Laminar Soot Processes experiment. "It's the first truly steady nonbuoyant flame that's been observed by anybody anywhere on Earth," said Faeth. "It's a real first and the pictures we saw today will probably find their way into textbooks of the future."

The Mission Scientist console was the focal point during MSL-1 for managing operations by the various experiment teams. Mission Scientist Dr. Mike Robinson (right) was assisted by Sharon Cobb (left) and Rick McConnell. All three are from Space Sciences Lab. ***Photo by Terry Liebold***

MSL-1 Mission Manager Teresa Vanhooser

Another combustion researcher was equally elated after seeing runs Sunday evening in the investigation known as the Structure Of Flame Balls at Low Lewis-number. Principal Investigator Dr. Paul Ronney of the University of Southern California in Los Angeles described them as "successful beyond my wildest dreams." The study was designed to determine under what conditions a stable flame ball can exist and if heat loss is responsible in some way for the stabilization of the flame ball during burning.

Combustion science was one of the primary research fields on the MSL-1 scientific agenda because fire and burning processes play such a

continued on page 3

The MSL-1 mission brought together an international team of scientists, engineers and technicians in a venture that will model future Space Station operations. Members of a contingent from Japan supported experiments from the MSL Science Operations Area. At right is John Bartlett of Teledyne Brown Engineering. ***Photo by Terry Leibold***

inside this issue…

Project LIGHT Survey Results

Students Test Engineering Skills in Fourth Moon Buggy Race

The same spirit of ingenuity that produced NASA's Lunar Roving Vehicle is back at work as college and high school students prepare for the 4th Annual Great Moon Buggy Race, sponsored by the Marshall Center.

Students put their engineering skills to the test by designing, building and racing their versions of the "moon buggy" on a track simulating the lunar surface. Teams representing 15 colleges and high schools from across the country will compete beginning at 10 a.m. April 19 at the U.S. Space and Rocket Center in Huntsville.

Competitors will race in the shadow of a giant Saturn V, like the rocket that boosted NASA's Lunar Rover to the Moon, and a full-size Space Shuttle mock-up. The one-half mile racecourse is speckled with "lava ridges," "craters" and sandpits — simulating the lunar surface — as it winds through the Space Center's grounds.

Marshall support of the race has a historical basis, since Marshall is where the Lunar Roving Vehicle and the Saturn V were designed and developed. The moon buggy helped astronauts explore their landing sites on the Moon during the Apollo 15, 16 and 17 missions.

"The fascinating thing I see over and over is the students' interest in space," said Jim Dowdy, moon buggy competition coordinator and University Affairs Officer at Marshall. "They go for anything that's connected to the space program. The competition enhances awareness of human exploration and development of space."

High school and college students from across the country will compete in the fourth Annual Great Moon Buggy Race April 19. The teams design, build and race their models of the moon buggy on a track that simulates lunar terrain. Shown here are participants in last year's race at the U. S. Space and Rocket Center, also the site of this year's moon buggy race. ***Photo by Dennis Keim***

Each two-member team will race their human-powered buggy, piloted by one male and one female student. After a safety inspection of each vehicle, the competition will begin when the two crew members carry their moon buggy a distance of 20 feet and place it at the starting line.

Once the signal comes that the event clock is ticking, the crew will unfold and assemble their moon buggy from a bin no larger than a 4-foot cube and race around the course. The event clock will stop when the vehicle and its crew cross the finish line.

Prizes will be awarded to the top three finishers. The top prize is a trip to Kennedy Space Center in Florida to watch a Space Shuttle launch. A prize also will be awarded to the buggy judged to be the "best" design from an original, creative concept and offering the best technical solution to navigating on a planetary surface.

Teams scheduled to compete in the race are from Arizona State University (Tempe, Ariz.); Auburn University (Auburn, Ala.); North Dakota State (Fargo, N.D.); Ozark Community College (Springfield, Mo.); Pittsburg State University (Kansas); College of New Jersey (Trenton, N.J.); University of Alabama in Huntsville; University of Evansville (Indiana); University of Florida (Gainesville, Fla.); University of Puerto Rico (Humacao, Puerto Rico); University of Vermont (Burlington, Vt.); and the University of Tennessee (Knoxville).

There are three entries in the high school division: Bob Jones High School (Madison, Ala.); Monterey High School (Monterey, La.); and Autauga County Vocational Center (Prattville, Ala.).

Sponsors of the event, other than Marshall, include the American Institute of Aeronautics and Astronautics and the U.S. Space and Rocket Center. Admission to the U.S. Space and Rocket Center on the day of the event will include the moon buggy competition.

5K Run Set for Environmental Month

On April 17 the Marshall Center Recycling Committee will sponsor a 5K fun run for employees and on-site contractors to help Marshall "Pick up the Pace" during Environmental Awareness Month. The 5K race will begin at 11:30 a.m., in front of Building 4752 with signups from 11 to 11:20 a.m. Those interested may also signup in advance by contacting Jeannette Bedwell (4-1395, Jeannette.Bedwell@msfc.nasa.gov). The top 3 finishers in the male and female divisions will receive awards.

Willhide Named AA for Public Affairs

NASA Administrator Daniel S. Goldin has named Peggy C. Wilhide as the Associate Administrator for Public Affairs.

Wilhide will replace Laurie Boeder, who joined the Department of Health and Human Services as the Deputy Assistant Secretary for Public Affairs, Policy and Plans.

Wilhide served as the Press Secretary for Vice President Al Gore from May 1995 to August 1996, responsible for all day-to-day press duties. From Nov. 1991 to May 1995, she served as Press Secretary to Senator Charles S. Robb.

Safety and Mission Assurance Training Now on the Web

An Internet-distributed training and on-the-job information resource developed by the NASA Office of Safety and Mission Assurance is the newest element of the office's Professional Development Initiative. This self-paced individual development education resource will, according to Associate Administrator for Safety and Mission Assurance Frederick D. Gregory, "enhance your understanding of SMA theory, practice, and the new techniques which will enable us to meet the challenges facing NASA now and in the future."

The training resource offers an innovative approach in implementing NASA's strategic plan through self-paced instruction and day-to-day job support, and covers a variety of subject areas related to safety and mission assurance. Sample topics include performance-based contracting, configuration management and preventive/corrective action. Currently, 30 of the 60 Web-based instruction modules planned for this year can be accessed from Internet-capable workstations seven days a week.

The training is being developed by the Professional Development Initiative Working Group, consisting of teams of subject matter experts from NASA centers, including Marshall, and will be introduced to potential users with a series of briefings and hands-on demonstrations.

Training material is currently available to any NASA employee wishing to preview the system prior to on-site demonstrations. This can be done by accessing the home page at "http://pdi.msfc.nasa.gov" on the World Wide Web. After obtaining a user ID and password, users will be able to browse through various catalogs, curricula, and other training resources.

System demonstrations at Marshall are scheduled for 8 a.m., 10 a.m., and 2 p.m. today and tomorrow, in building 4203, Room 6002. More information is available from Mike Smiles, 4-5277; Don Hull, 4-9418, or Ethel Grady, 4-0045.

Marshall-Managed Microgravity Science Mission

from page 1

central part in daily life, including key areas such as heating, ground transportation, spacecraft and aircraft propulsion and powering industrial activity.

Overall, the MSL-1 mission was made up of 33 experiments to be conducted in the low-gravity environment of space. In addition to combustion, the investigations concentrated on unraveling mysteries in the area of protein crystals and materials science. Protein crystal growth (PCG) is a critical area of study in biological research, pharmacology and drug development, and this mission carried the largest number of PCG samples of any Shuttle flight so far. The experiments involving study of specialized metals and alloys focused on a key element of materials science research — understanding how the structure of a material forms, and how this structure affects the material's properties.

In addition, the mission carried some of the hardware, facilities and procedures that will be used on the International Space Station, such as the EXPRESS rack, designed to simplify and speed the process of housing, transporting, installing and operating Space Station experiments.

In a wrapup science briefing Monday afternoon, Joel Kearns, manager of NASA's Microgravity Research Program Office at the Marshall Center, summarized the abbreviated mission. "The past few days since launch have allowed the first Microgravity Science Laboratory team to get a good look at our destination, to verify that we are headed in the right direction. But, we were not able to reach our destination because of the shortened mission."

"We did test our new state-of-the-art scientific research apparatus, and it functioned extraordinarily. Our scientific and commercial research teams were able to acquire their first glimpses of some phenomena never seen before in long duration microgravity. And, we were able to confirm the performance of the EXPRESS Rack which will be our host for all initial research experiments on the International Space Station," said Kearns of the mission's accomplishments.

Looking beyond the scheduled Tuesday landing of Columbia, Kearns said: "Yesterday, after the decision was made to shorten this Space Shuttle mission, I took the step of requesting a reflight of this MSL-1 mission in the future."

In preparation for the planned Tuesday landing, all MSL-1 experiments were ended by late Monday afternoon, and the shutdown of the Spacelab module was completed shortly before midnight Monday.

Day Care Center to Have Open House

The Marshall Child Development Center will be having an Open House on April 19 from 9 -11 a.m. All personnel are invited to come by and tour the newly expanded facility. There will be refreshments, door prizes, and children's activities.

Billy Ray Matthews holds up the 100 rating that Charlie's Grill in Building 4200 received from the Center's Environmental Health Group during a recent inspection. ***Photo by Emmett Given***

Employee Ads

Miscellaneous

★ Murray riding mower 10HP 30" cut, 6 yrs old, used 3 seasons $385. 881-5269
★ New Corona kerosene heater, 12,000 BTU/hr with electric starter and kerosene transfer pump $50. 881-5269
★ Two tickets to Les Miserables, April 19, 2 p.m. $25 each, pair for $40. 883-0066
★ German wardrobe with glass doors, dining room set with six chairs, china cabinet. 837-9814
★ Air-conditioner GE 9700 BTU/hr, 230V, three years old, used one summer, $125. 721-1757
★ Golf clubs, Wilson 1200, 1-4 woods, 2-PW irons $75. 881-1249
★ Two NASCAR tickets for Busch and Supertruck races in Nashville, face value, must sell. 461-7434
★ 231 Massey Ferguson tractor model 1996, 38 HP, 6 foot bushhog. 615-433-0369
★ Western style saddle, blanket bridle w/bit girth halter lead rope $350. 232-8311
★ Sears craftsman electric lawn edger $25. 881-5269
★ 486 DX-33 Computer, 210 MB HD, 8MB RAM soundcard, speakers, SVGA monitor, windows 3.1, Microsoft Office $600 o.b.o. 922-9044
★ One week vacation condo rental $250. Your choice of location, must use by May 1, 1997. 837-7224
★ AKC female Dalmatian, 2 years old. Almost time to breed again. $100. Pager 341-6671 or home phone 205-306-0194

Vehicles

★ 1994 Ford Mustang GT convertible, 29,300 miles; $14,900. 881-0438
★ ATV Honda 125M $1,000. 533-6114
★ Goodyear Invicta GS, P175/65R14 (4) 70K miles radial tires, best offer. 353-7670
★ 1996 Kawasaki ZXI 1100 Jetski; 1995 Yamaha Raider 701, double galvanized trailer extras $12,000 o.b.o. 883-2919
★ 1994 Dodge Caravan, one owner, 87K miles, $9,100. 837-0085
★ 1992 B-2200 LE-5 Mazda 5-speed, air, bedliner, camper top, 95K highway $6,100. 355-7896
★ 1992 Ford Ranger Sport 3.0 liter, V-6, new tires/ brakes $7,000. 881-9816
★ 1986 Blazer, Tahoe, C-10, 4x4, automatic, one owner $3,950. 205-974-6644
★ 1979 Caprice Landau, original owner, $1,300 o.b.o. 881-1249
★ 1986 Blazer, Tahoe, C-10, 4x4, automatic, one owner $3,950. 205-974-6644
★ 1995 GMC SWB truck, 4 WD, 5-speed, bed liner, hunter green $16,500 o.b.o. 205-796-6271

Found

★ Pocket knife, 4200 parking lot, describe and claim. 882-1413

Wanted

★ Want to buy a sturdy file cabinet. 883-2237
★ 10 Speed or road bike in working condition, approx. $30-40. 536-7541

Center Announcements

☛ ***Spring Dinner Dance —*** Tickets for the April 12 Ballroom Dance are on sale by the MARS Ballroom Dance Club. The semi-formal event will be held in the VBC West Hall and will feature ballroom music by the Barry Orth Combo. Socializing will begin at 6:30 p.m., buffet dinner will be served at 7 p.m., followed by dancing from 8 to 11:30 p.m. Tickets are $18 per person with a $3 discount for members; for tickets call T. Landers (4-6818), P. Sage (4-5427), E. Ogozalek (837-1486), and B. Williams (4-3998). To make reservations for a table of 8 call Woody Bombara (650-0200).

☛ ***NARFE—***The National Assn. of Retired Federal Employees will meet April 12 at the Senior Center on Drake Avenue. Ms. Jean Herron will provide information on the "Academy of Lifetime Learning at UAH". Refreshments at 9:30 a.m. and program will begin at 10 a.m. For more information call 539-1333.

☛ ***38th Annual Convention—***The National Assn. of Retired Federal Employees will host the 38th Annual Convention of State Chapters. The convention will be held on April 17-18 at the Holiday Inn at Madison Square Mall. State Representative Jim Haney will address NARFE members on the opening day of the convention. A pre-convention reception will be held from 6 p.m. to 8 p.m. April 16. For more information call 837-0382 or 881-3168

☛ ***NCMA —***The Huntsville Chapter of the National Contract Management Assn. and the Redstone/Huntsville Chapter of the American Society of Military Comptrollers will hold a joint luncheon at 11:30 a.m. on April 10 at the Trinity United Methodist Church located at 607 Airport Road SW in Huntsville. Ronald Davidson will be speaking on the topic, "A look into the Federal Budget." The cost is $8 for members and $9 for non-members. For reservations call 205-533-3954.

☛ ***MARS —***The MARS Golf Tournament is scheduled for May 3 at Plantation Point. The format for the tournament will be 2-man best ball. Deadline for entries is 12 noon on April 25. Entry fee is $4 and green fees will be paid at the course. Open to all MSFC employees or retirees. Entry contacts are L. Foster (4-1589), J. Butler (4-3808), J. Loose (4-2422) and R. Harwell (4-2684). For more information call S. Tillery at 4-8651.

☛ ***Blood Drive—***The American Red Cross will be at Bldg. 4752 on April 18 until 1:30 p.m. for the monthly Marshall Blood Drive visit. The following schedule should eliminate long waiting periods: T - Z, 8 a.m.; Q - S, 8:30 a.m.; M - P, 9 a.m.; I - L, 9:30 a.m.; F - H, 10 a.m.; C - E, 10:30 a.m.; and A - B, 11 a.m. Marshall employees who serve as blood donors without compensation will be authorized 4 hours of excused absence for this purpose. A longer period may be authorized only when required for recuperation. Contractor personnel will comply with the policy of their respective companies.

☛ ***Third Annual Bookfair—***The third NASA Exchange-sponsored Bookfair will be held April 22-24, from 8 a.m. - 4 p.m. in Bldg. 4200, Rm. G13. Available for purchase at substantial savings, selections will include best sellers; sports and children's books; and books on cooking and decorating. For more information contact Carol Wasserman at 4-7564.

☛ ***Toastmasters—***Redstone Toastmasters International will meet every Tuesday at 6 p.m. in the Morrison's Cafeteria in Madison Square Mall. For more information call 461-0476.

Job Opportunities

CPP 97-13-CP, AST Basic Properties of Materials, GS-1310-14, S&E, Space Sciences Lab, Microgravity Science & Applications Div., Biophysics Br. Closes April 14.

CPP 97-14-CP, AST, Basic Properties of Materials, GS-1310-15, S&E, Space Sciences Lab, Microgravity Science & Applications Div., Biophysics Br. Closes April 14.

CPP 97-21-SH, Supervisory AST, Flight Systems Test, GS-861-14, S&E Propulsion Lab., Propulsion Test Div., Propulsion Test Mechanical Sys. Branch. Closes April 14.

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